



MEAT CUTTING BANDSAW



TSBM

www.thetoolshed.co.nz

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Thank You

For the purchase of this ToolShed product. We try our hardest to supply customers like you with the best quality products available, at the best price possible. We cant wait to continue working together in the future.

Please contact us for any servicing, replacement parts, or questions you might have about your ToolShed product by visiting our website, or calling: 0800 948 665.

PRODUCT DETAILS

Product Model ToolShed Meat Cutting Bandsaw

Product Code TSBM

DISTRIBUTED BY:



Note:

This manual is for your reference only. Due to the continuous improvement of the ToolShed products, changes may be made at any time without obligation or notice.

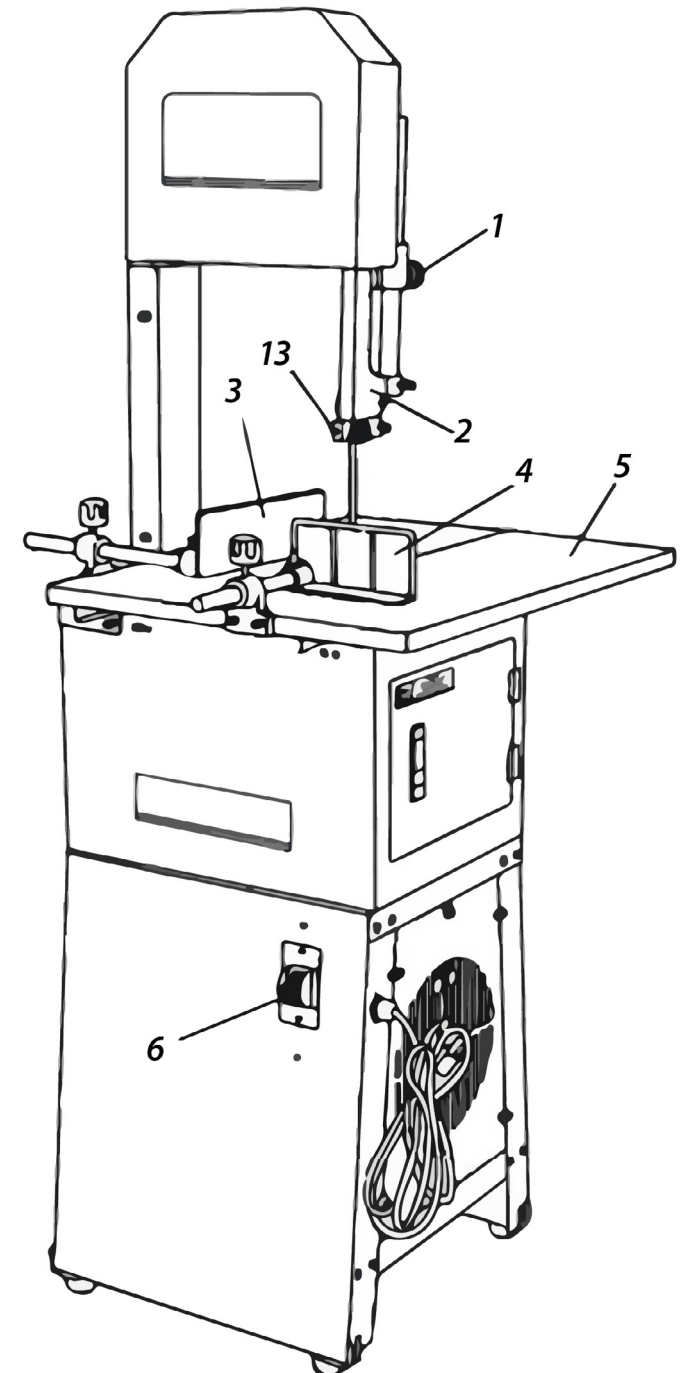
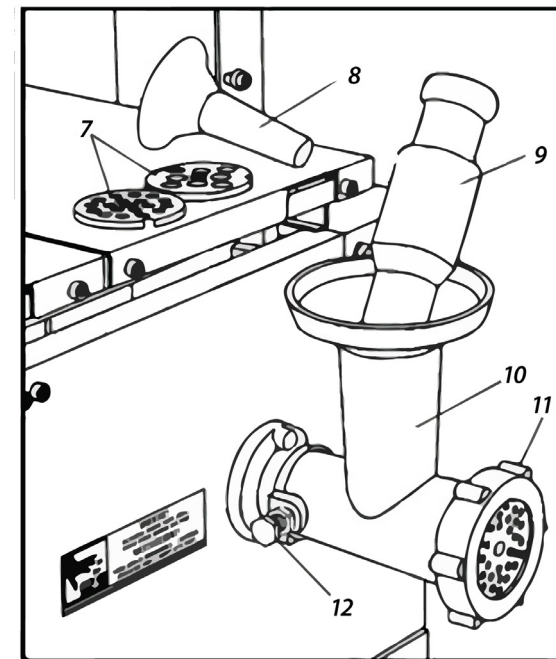
Warranty:

This product may be covered under The ToolShed warranty. For more information, see our Terms & Conditions at www.thetoolshed.co.nz

SPECIFICATIONS

Maximum Cutting Width	245mm
Maximum Cutting Depth	240mm
Wheel Diameter	250mm Ø
Band Length	2085mm
Motor Size	550 Watts
Voltage	230 Volts
Dimensions (HxWxD)	1500 x 610 x 550mm
Table Dimensions (LxW)	600 x 465mm
Table Height	865mm
Net Weight	52 kg

PRODUCT IDENTIFICATION



- 1 Blade Guard
- 2 Upper Blade Guard
- 3 Long Adjustable Fence
- 4 Short Adjustable Fence
- 5 Sliding Table
- 6 On/Off Switch
- 7 2 of 3 Interchangeable Knives
- 8 Sausage Filler
- 9 Meat Packer
- 10 Meat Grinder
- 11 Meat Grinder Collar
- 12 Meat Grinder Lock Bolt/Nut
- 13 Upper Blade Guide Assembly

SAFETY GUIDELINES

WARNING

READ ALL SAFETY WARNINGS & INSTRUCTIONS. Failure to follow instructions and warnings could lead to serious injury, electric shock, or fire.

Work Area Safety

- **Ensure that your work area is kept clean and well lit.** Lack of visibility and clutter greatly increase the risk of accident when using tools.
- **Keep bystanders, pets, and children clear when operating this power tool or machine.** They can cause distraction or risk injury to themselves.
- **Ensure you are not operating the power tool or machinery in the presence of dust, liquids, flammable gases, or anything that can create an explosive atmosphere.** Power tools and machinery can create sparks which can lead to ignition and fire hazards in working environments.

Personal Safety

- **Always wear personal protective equipment (PPE).** Eye protection, ear protection, dust masks, and other protective equipment will help to reduce the risk of personal injury or long-term illnesses.
- **Dress appropriately. DO NOT wear loose clothing that can get caught in moving parts.** Keep hair, loose clothing, jewellery, and anything else that could be of risk, away

from moving parts in the machine, or they could become caught therein.

- **Always remain alert and DO NOT operate power tools or machinery under the influence of any substances such as alcohol or drugs, including prescription medications.** Lack of focus could lead to injury or accidents while operating these power tools and machinery.
- **Always ensure proper footing and balance.** Overreaching can lead to slipping and falling which can result in injury or accident.
- **Ensure the power switch is in the OFF position before connecting any battery, or power source to the power tool or machinery.** This can cause injury as tools and machinery can suddenly fire incidentally when live, causing accidents.
- **Use all provided dust collection and extraction attachments, if included.** This equipment, along with the use of PPE dust masks, can help keep you safe from dust, and keep your work site clear from hazards.
- **Ensure loose parts such as wrenches or adjusting keys are removed before starting the power tool or machinery.**

SAFETY GUIDELINES

Electrical Safety

- **DO NOT use the power tool or machinery in rainy conditions or wet areas where the power tool or machinery could get wet.** Water in this power tool or machinery can lead to electric shock.
- **Only use the power tool or machinery when the plug correctly matches the power outlet.** Modifying plugs greatly increases the risk of electric shock.
- **Keep the power cord away from anything that could damage it such as sharp edges, moving parts or heat.** A damaged power cord increases the risk of electric shock.
- **Only operate outdoors with the use of an outdoor extension lead.** Not all extension leads are suited to outdoor use and using one which is not can greatly increase the risk of electric shock.
- **Avoid body contact with grounded or earthed surfaces.** Surfaces such as radiators, ranges, pipes, and refrigerators can increase the risk of electric shock due to your body being earthed or grounded.
- **Never carry the power tool by the cord, or yank the cable from the power outlet.** This can damage the internal wiring and may become a hazard.

Power Tool & Machinery Use & Care

- **Use the correct tool for the job.** Forcing a tool to do a job it was not designed for increases the risk of accident or injury.
- **Disconnect tools and machinery from power, or remove batteries before doing any maintenance or adjustments, or before storing the tools and machinery.** This reduces or removes the risk of a power connection that causes the tool or machinery to accidentally fire, which can help prevent injury or accident.
- **Check the general condition of the power tool for damage or any problems that could affect the way the tool or machine works.** An unrepaired tool or machine can lead to accident and injury. Only have your tool or machine repaired with genuine parts from The ToolShed.
- **Only use the power tool and machinery with genuine parts or accessories that are designed to be used with this power tool and machinery.** Failure to do so could result in accident or injury or damage your tool or machinery.
- **Store your tool or machinery out of reach of children, and away from untrained personnel when not in use.** Use by somebody untrained, or a child, could lead to accident or serious injury.

WARNING

Electric shock can cause serious injury or, in some cases be fatal.

SAFETY GUIDELINES

Service

- **Have your tools and machinery serviced at The ToolShed with ToolShed replacement parts.** This will ensure that the safety of the power tool or machine is maintained.



WARNING

The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Always Use Common Sense

- It is not possible to cover every conceivable situation you can face. Always exercise care and use your common sense. If you get into a situation where you feel unsafe, stop and seek expert advice. Contact your dealer, service agent, or an experienced user. Do not attempt any task you feel unsure of!

Bandsaw Specific Safety

Safety is a combination of common sense, staying alert and knowing how your bandsaw works. Read and understand all of the following safety rules before commencing operation.

- Adjust the upper guide to just clear the height of your workpiece.
- Make sure the blade is properly adjusted and tensioned before beginning operation.
- DO NOT remove small, jammed pieces until the blade has come to a complete stop.
- Hold the item you wish to cut firmly against the table.
- Turn the machine off if the piece you are cutting is to be backed out of an uncompleted cut.
- DO NOT operate this bandsaw using a dull or worn blade.
- After cutting meat, always sanitise and clean all exposed parts.



WARNING

Serious cuts, amputation, or death can occur from contact with the moving saw blade during operation, or if blade breakage occurs. To reduce this risk, anyone operating this machine MUST completely heed the hazards and warnings in this manual.

SAFETY GUIDELINES

- **Hand placement:** Placing your hands or fingers in line with blade during operation may result in serious injury if your hands slip or if the workpiece moves unexpectedly. Do not position fingers or hands in line with the blade, and never reach under the table while the blade is moving.
- **Blade speed:** Cutting the workpiece before the blade is at full speed could cause the blade to grab your workpiece and pull your hands into the blade. Allow the blade to reach full speed before starting to cut. Do not start the machine with the workpiece in contact with the blade.
- **Feed rate:** To avoid the risk of your workpiece slipping and causing operator injury, always feed stock evenly and smoothly.
- **Blade condition:** Dull blades require more effort to perform a cut, increasing the risk of accidents. Do not operate the bandsaw with dirty, dull, cracked, or badly worn blades. Inspect your blades for cracks and missing teeth before each use. Always maintain proper blade tension and tracking while operating.
- **Clearing jams and cut-offs:** Always stop the saw and disconnect power before clearing scrap pieces that get stuck between the blade and table. Use a brush or push stick, not your hands, to clean scraps from the table.
- **Blade control:** To avoid risk of injury due to blade contact, always allow the blade to stop on its own. Do not try to stop or slow the blade with your hand or workpiece.
- **Cleaning & sanitising:** Keep your machine and work area clean and sanitary. Do not use solvents that can contaminate meat and cause illness. Properly clean and sanitise the saw before and after each use.
- **Blade replacement:** Under normal conditions, the saw blade should be replaced after cutting approximately 2000kg of meat or bone. To avoid mishaps that could result in operator injury, ensure the blade teeth face down toward the table and the blade is properly tensioned and tracked before operating.
- **Supporting cuts:** Cuts should always be fully supported by table, fence, and included meat pusher. If necessary to maintain safe cuts, use auxiliary fixtures. Do not cut very small or thin pieces in which it would be hard to maintain control.
- **Cutting techniques:** To avoid the blade getting pulled off its wheels or accidentally breaking and striking the operator, always turn the bandsaw off and wait for the blade to come to a complete stop before backing the workpiece out of the blade. Do not back the workpiece away from the blade while the saw is still running. Do not force or twist the blade while cutting. This could result in blade damage or breakage.
- **Workpiece material:** This machine is designed to cut fresh and frozen meat and bones. This machine is not designed to cut wood, metal, glass, stone, tile, etc.

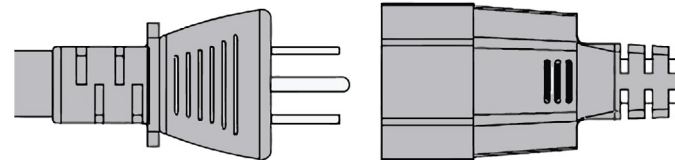
ASSEMBLY

Before Each Use

- **Always inspect your Bandsaw every time.**
- To reduce the risk of injury from accidental starting, turn the switch off and unplug the bandsaw before changing the set-up, removing covers, guards, or the blade.
- Check the alignment of moving parts, binding of moving parts, breakage of parts, bandsaw stability, and any other conditions that may affect the way the bandsaw works.
- If any part is missing, bent or broken in any way, or if any electrical parts do not work properly, turn the bandsaw off and unplug from the wall outlet. Replace damaged or missing parts before using the bandsaw again.
- Ensure the blade teeth point downward, towards the table.
- Ensure the blade guides are properly adjusted.
- Ensure the blade tension is properly adjusted.
- To reduce the risk of accidental blade contact, to minimise blade breakage, and provide maximum blade support, always adjust the upper blade guide, and the blade guard to just clear the height of your workpiece.
- Before starting your cut, observe the saw while it runs. If it makes any unfamiliar noise or vibrates excessively; stop immediately. Turn the saw off and unplug the machine. Do not restart the bandsaw until you have found and corrected the problem.
- Allow the blade to reach full speed before commencing cutting.

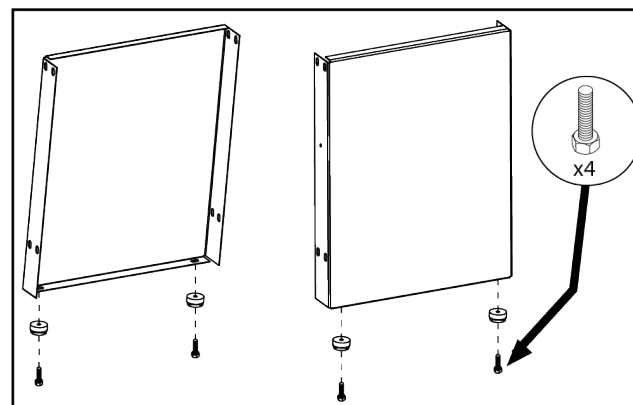
Connecting Switch to Motor

- The switch has been pre-wired at the factory to make connection easier. Connect the plugs to each other during the assembly stage.



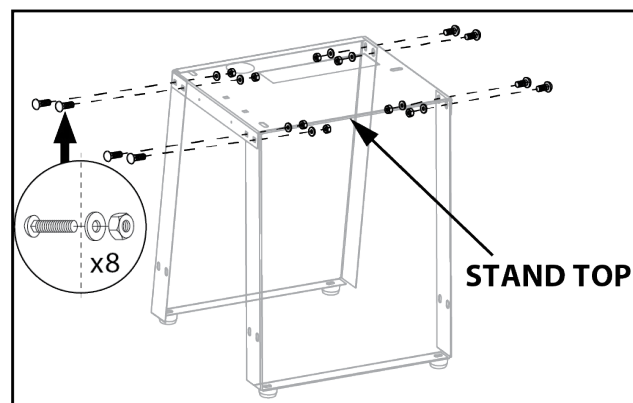
Assembling the Machine

- Insert (4) M6-1 x 20 hex bolts into the rubber feet, and attach the feet to each corner on the stand legs (as below).



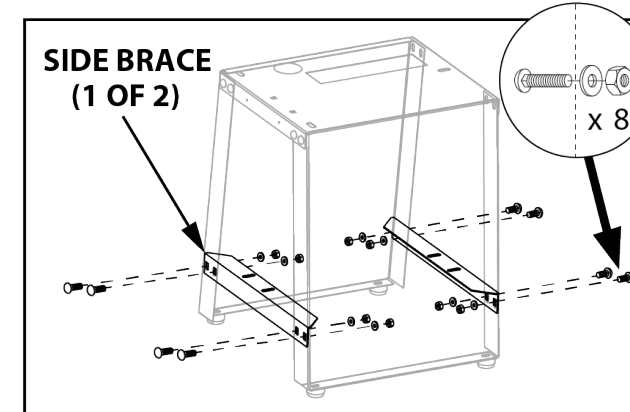
- Attach the stand legs to the stand top with (8) M8-1.25 x 16 carriage bolts, 8mm flat washers, and M8-1.25 hex nuts (see Fig. Below).

NOTE: Do not completely tighten the fasteners until instructed to later.



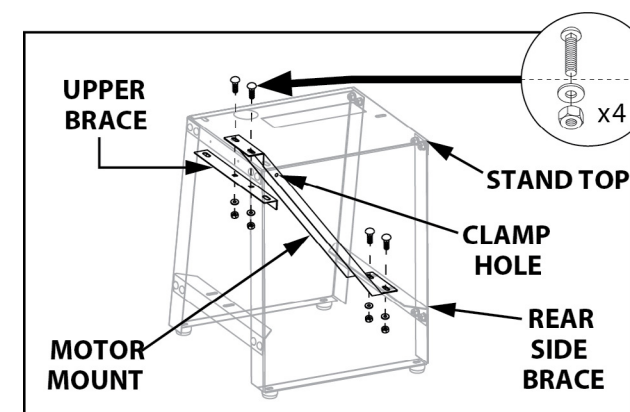
ASSEMBLY

- Attach the side braces to the stand legs with (8) M8-1.25 x 16 carriage bolts, 8mm flat washers, and M8-1.25 hex nuts.



- Attach the motor mount to the upper brace through the stand top with (2) M8-1.25 x 16 carriage bolts, 8mm flat washers, and M8-1.25 hex nuts. Then attach the motor mount to rear side brace with (2) M8-1.25 x 16 carriage bolts, 8mm flat washers, and M8-1.25 hex nuts.

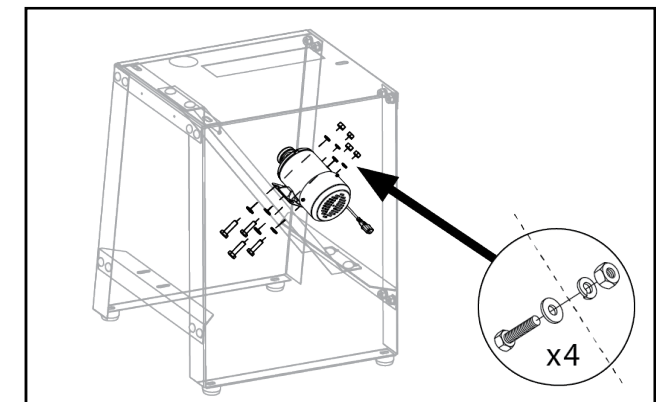
IMPORTANT: Verify the clamp hole on the motor mount is positioned correctly on top before proceeding to the next step.



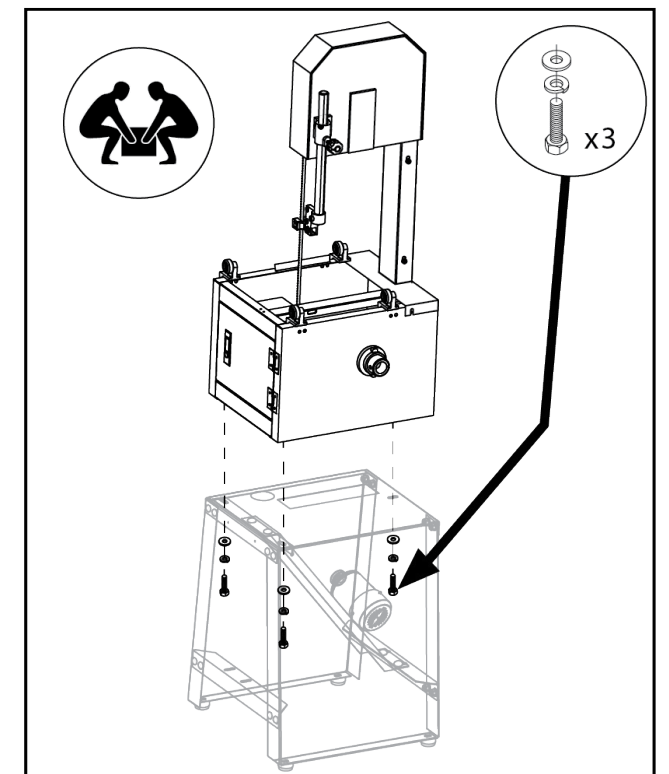
- Make sure the stand top is centred over the stand sides and tighten all loose hex nuts.

- Attach the motor to the motor mount with (4) M8-1.25 x 20 hex bolts, 8mm flat washers, 8mm lock washers, and M8-1.25 hex nuts, as shown below.

NOTE: Do not completely tighten the fasteners until instructed to later.

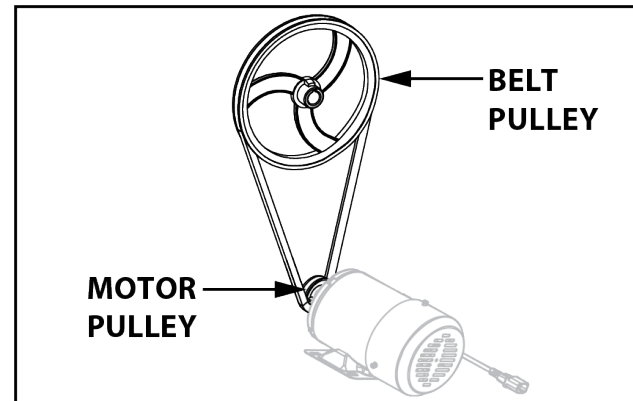


- With help from an assistant, lift the saw body and place it on the stand (see below). Secure with (3) M8-1.25 x 20 hex bolts, 8mm flat washers, and 8mm lock washers through elongated holes on the stand top.



ASSEMBLY

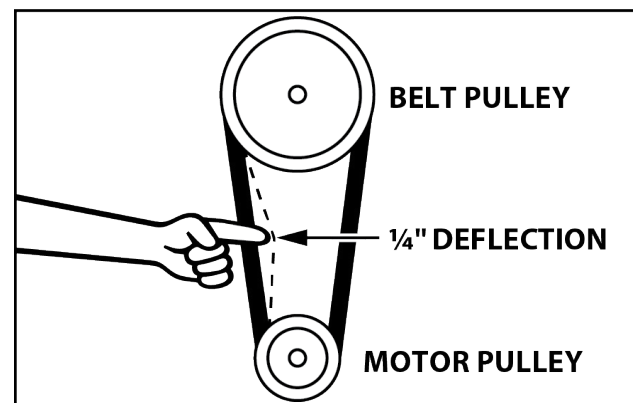
- To fit the V-belt into the belt pulley groove, raise the motor, then fit the V-belt into the motor pulley groove (see below).



- Press down on the centre of the motor to tension the V-belt, then tighten (4) hex bolts to secure the motor. Ensure that the motor does not twist while applying pressure.

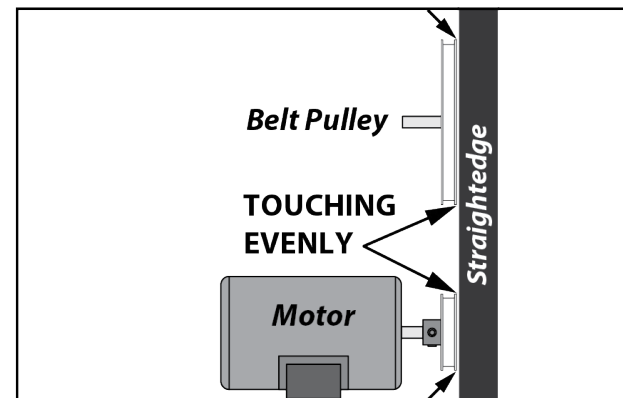
NOTE: When properly tensioned, the belt should deflect about 1/4" when moderate pressure is applied to the belt between the upper and lower pulley (as below).

- If there is more than 1/4" deflection, loosen (4) motor mount hex bolts, then repeat this step until properly tensioned.

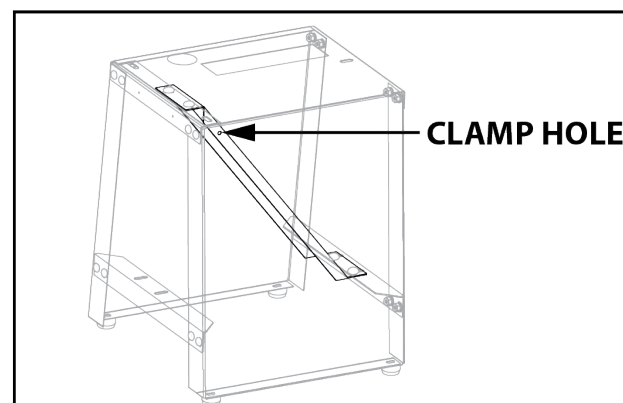


- Hold a straight edge (or some form of ruler or level) close to the centre of both pulleys, and ensure it fully extends across the rims of both pulleys, as shown in the next Figure.

- » If the pulleys are parallel and coplanar, the straight edge will touch the top and bottom rims on both pulleys. No further adjustment is required.
- » If pulleys are parallel but not coplanar, the straight edge will touch the top and bottom rims on one pulley, but will not touch either rim on the other pulley. In this case, loosen (4) carriage bolts securing the motor mount, then re-position the motor so the straight edge touches the top and bottom rims on both pulleys. Repeat the previous two steps.

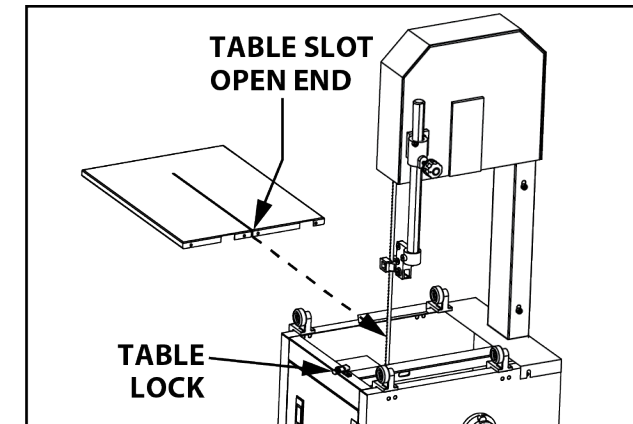


- Connect the motor power cord to the power cord receptacle on the rear ON/OFF switch housing, and secure to the motor mount clamp hole (see below) with the cable holder.

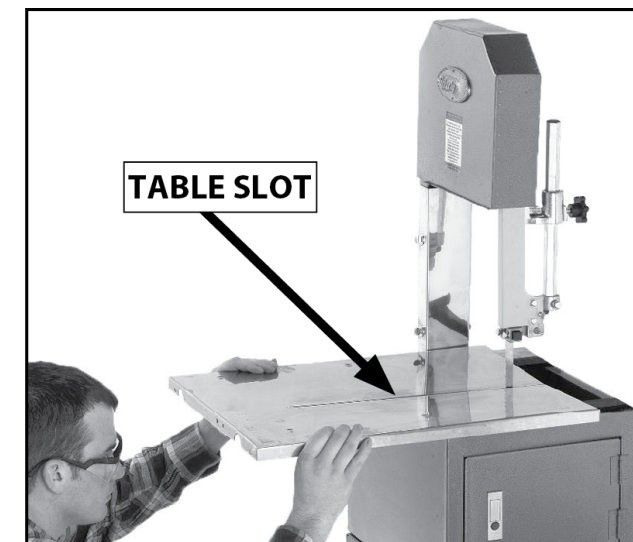


ASSEMBLY

- Verify the table lock location (see Figure below), and align the open end of the table slot with the blade.



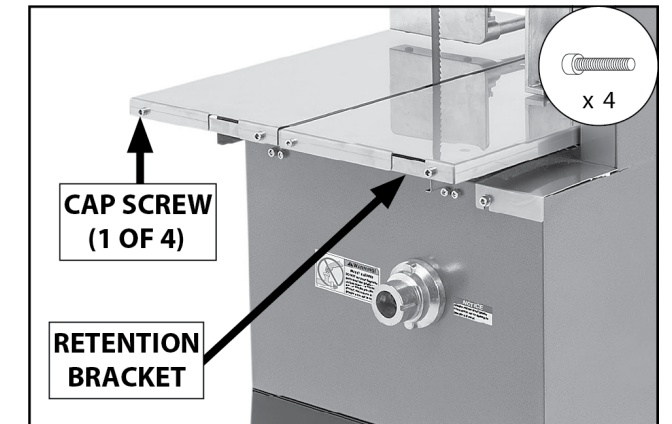
- Look down the underside of the table, as shown below, and line up the grooves on the table rails with the rollers on the saw body. Slide the table on its first group of rollers and make sure the blade fits into the slot in the table.



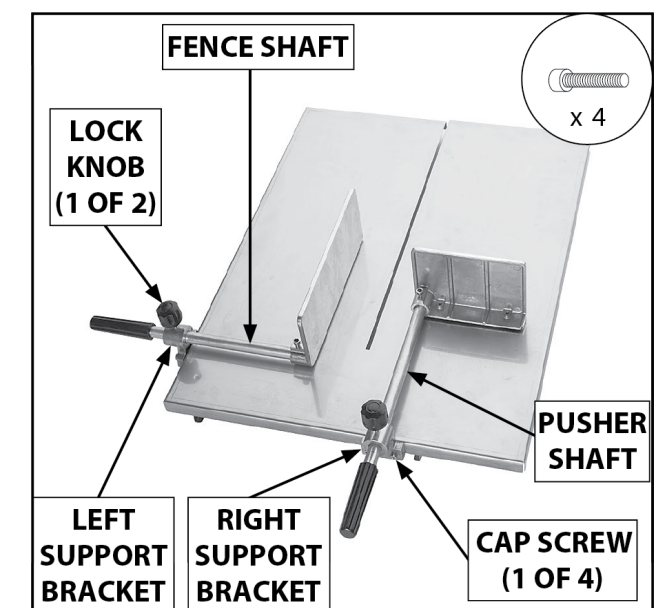
- Pull back on the table lock to slide the table over the second group of rollers.

NOTE: The table lock is spring-loaded and will engage with the hole in the table rail to prevent the table from sliding.

- Attach the retention bracket underneath the open end of the table and secure with (4) M6-1 x 10 cap screws (see below).

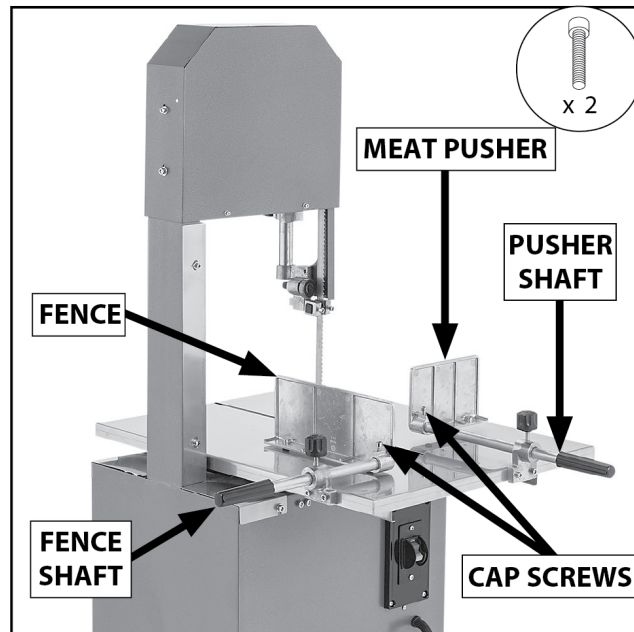


- Pull back on the table lock and verify that the table slides back and forth, then lock it in.
- Attach (2) support brackets to the table using (4) M6-1 x 16 cap screws.
- Slide the fence shaft through the left support bracket, then secure with (1) lock knob.
- Slide the pusher shaft through the right support bracket, then secure with (1) lock knob (as per the below figure).

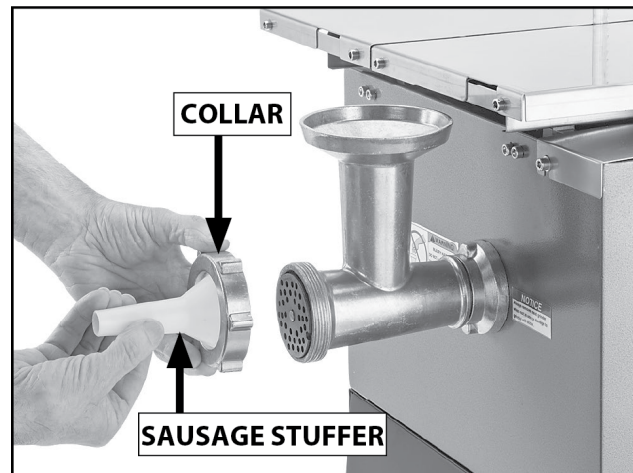
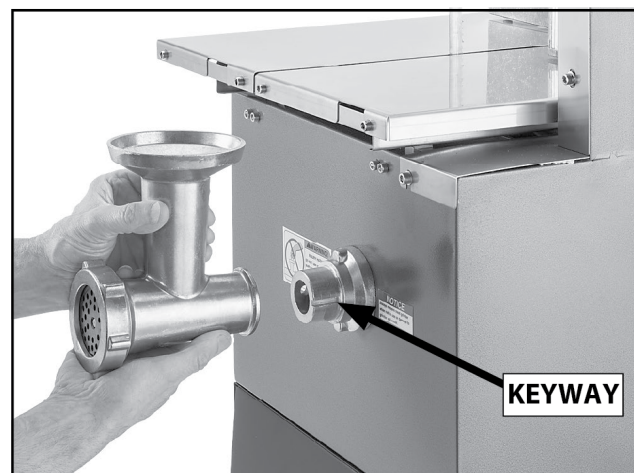


ASSEMBLY

- Install the fence onto the fence shaft and secure with (1) M6-1 x 16 cap screw (see Figure below).
- Install the meat pusher onto the pusher shaft and secure with (1) M6-1 x 16 cap screw (as below).
- Remove the collar from the end of the meat grinder (see Figure below). Fit the collar over the sausage stuffer, and tighten it on the meat grinder.

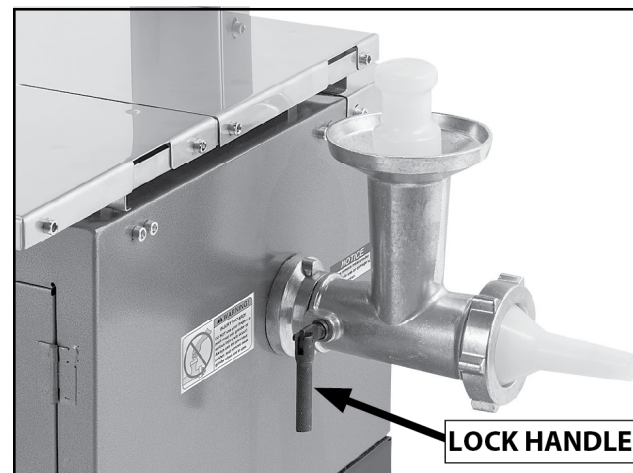


- Loosen the lock handle on the meat grinder, and line up the fixed key on the grinder with the keyway on the grinder mount.



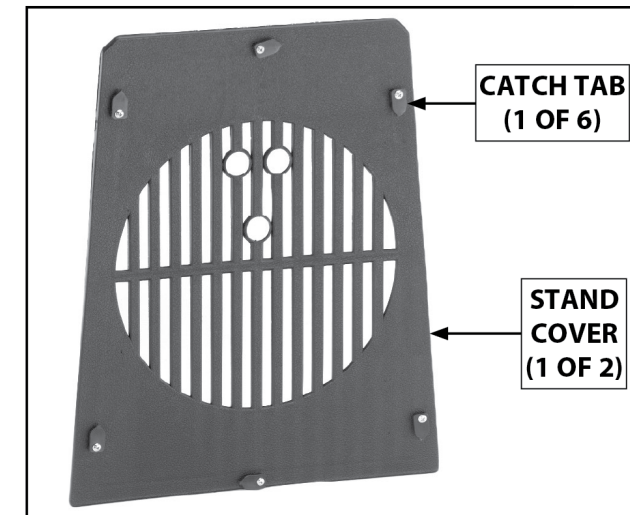
- Slide the meat grinder all the way onto the grinder mount and tighten the lock handle to secure the meat grinder in place (see Figure below).

NOTE: If the meat grinder does not fully seat, it may be necessary to spin the pulley wheel by hand so the meat grinder tongue fits into the groove on the auger.



ASSEMBLY

- Use a #2 Phillips head screwdriver to verify the catch tabs on the stand covers are tight enough to give resistance, so they will stay in place, but not overly tight so that they no longer rotate (as below).



- Install the stand covers inside the stand openings and attach by turning the catch tabs over the edges of the stand.



Adjust the Blade Tracking

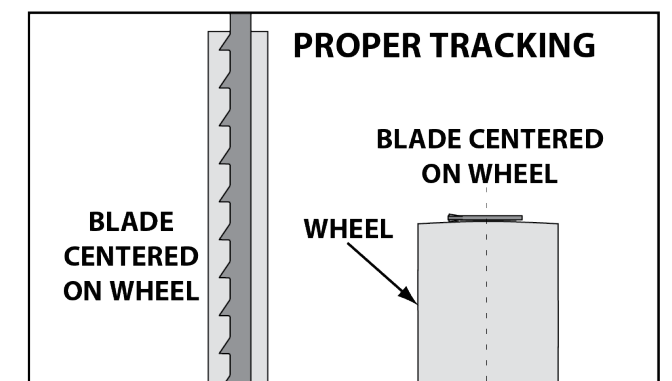
- "Tracking" refers to how the blade rides on the bandsaw wheels. Proper tracking is important for maintaining bandsaw adjustments and achieving correct blade tension. The shape of the wheels and the orientation of the wheels in relation to each other, determine how the blade tracks.



IMPORTANT

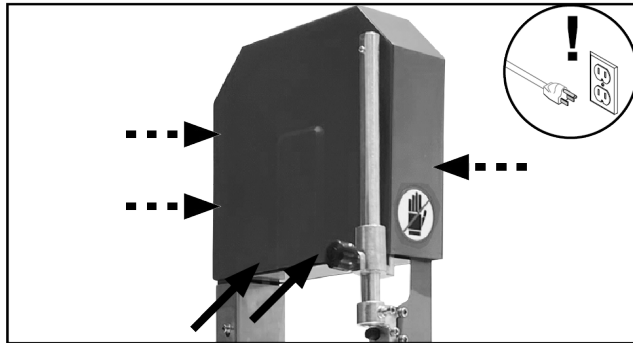
Improper tracking reduces cutting accuracy, causes excess vibrations, and places unnecessary stress on the blade and other components.

- The TSBM has crowned wheels. As the wheels spin, a properly tracking blade naturally tracks at the centre of the wheel.

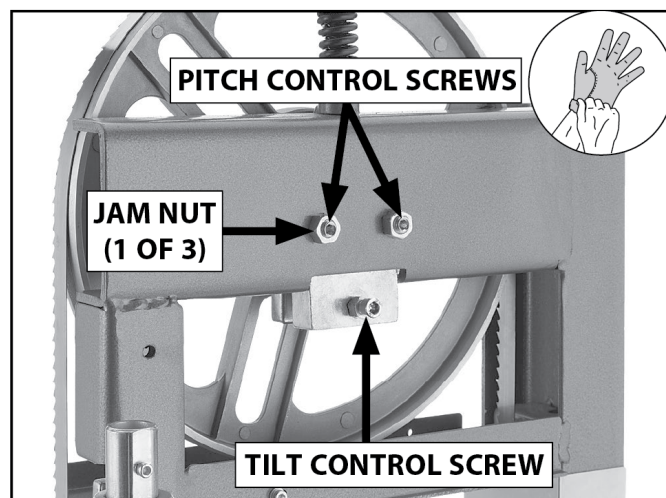


ASSEMBLY

- First you must disconnect the machine from its power source.
- Loosen and remove (5) cap screws securing the upper wheel cover (see below), then remove the cover.



- Put on (PPE) heavy leather gloves, then rotate the upper wheel by hand several times and observe how the blade rides on the wheel.
 - » If the blade consistently rides in the centre of the upper wheel, that means the blade is tracking properly.
 - » If the blade does not consistently ride in the centre of the upper wheel, this means the blade is not tracking properly.
- Locate the blade tracking control screws (see Figure below), loosen the jam nuts, then tighten or loosen the screws to adjust the pitch/tilt of the upper wheel.



NOTE: Pitch control screws control left and right pitch, and tilt control screw controls up and down tilt of the wheel.

- While adjusting screws, rotate the upper wheel by hand and observe the direction of the blade movement.
 - » If the blade tracks towards the front or rear of the wheel, adjust the tilt control screw until the blade is centred.
 - » If the blade tracks towards the front or rear of one side of the wheel, but tracks opposite on the other side, adjust the pitch control screws until the blade is centred.
- Once the blade appears to be tracking correctly, spin the upper wheel at least three full revolutions to ensure the blade remains centred.
- Verify the blade is properly tensioned refer to the *Tensioning the Blade* section on page 19.
- Verify the blade support bearing is properly adjusted see *Adjusting the Blade Support Bearings* on page 20.
- Verify the blade guides are properly adjusted see *Adjusting the Blade Guides* on page 20.
- Install the upper wheel cover removed in the previous step and secure.

IMPORTANT

Whenever changing the blade, or adjusting the blade tension or tracking, the blade support bearings and blade guides must be re-adjusted before resuming operation to ensure proper blade support.

ASSEMBLY

Test Run

- Once assembly is complete, you must test run your bandsaw to ensure it is properly connected to power and all safety components are functioning correctly.
- If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. The Troubleshooting table in this manual can help.
- The Test Run consists of verifying the following:
 - The motor powers up and runs correctly.**

WARNING

DO NOT start this machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run the machine:

- Clear all setup tools away from the bandsaw.
- Connect the bandsaw to the power supply.
- Turn the bandsaw ON, verify motor operation, and then turn the machine OFF.
- The motor should run smoothly and without any unusual problems or noises.

Clean Up

- After unpacking the machine and performing initial setup, peel off any protective plastic sheeting and thoroughly clean and sanitise the saw as directed in the *Cleaning & Sanitising* section on page 28 before beginning operation. Get in the habit of properly cleaning and sanitising the bandsaw before and after each use to avoid contamination and illness.

WARNING

When cleaning with sanitisers, ensure the product is approved for stainless steel food processing equipment and always follow the manufacturer's recommendations. To prevent illness or death, never use a product that will make the meat unsafe for human consumption.

OPERATION

Operation Overview

- The purpose of this overview is to provide the novice machine operator with a basic understanding of how this machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.
- Due to the generic nature of this overview, it is not intended to be an instructional guide. To learn more about specific operations, read this entire manual, seek additional training from experienced machine operators, and do additional research outside of this manual.

NOTICE

If you are not experienced with this type of machine, WE STRONGLY RECOMMEND that you seek additional training outside of this manual.

To complete a typical operation, the operator does the following:

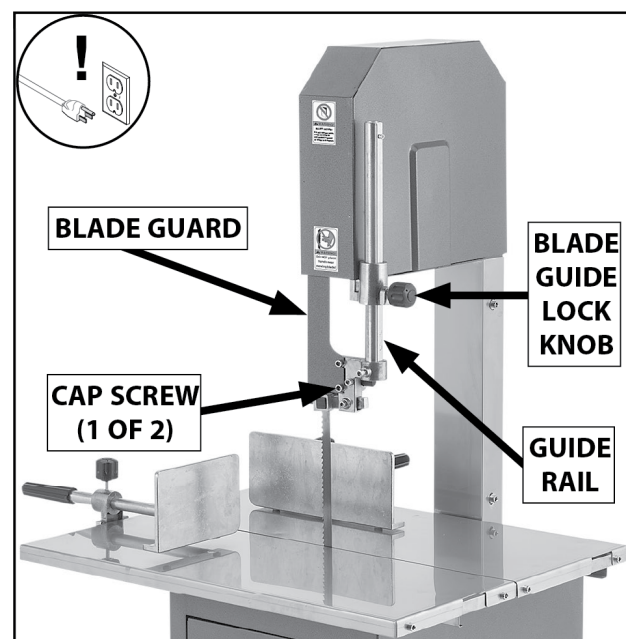
- Makes sure all components of the saw are properly cleaned and sanitised.
- Adjusts the fence for desired thickness of cut. Tighten the lock knob to secure it in place.
- Aligns the workpiece to the blade.
- Adjusts the blade guard to within 25mm (1") of the workpiece height.
- Turns the saw ON and waits for the blade to reach full speed.
- Using the meat pusher, slowly feeds meat through the cut.

NOTE: If the motor slows down or struggles with the cut, reduce the feed rate.

- Turns OFF the machine, waits for the blade to stop, then removes the cut-off piece.
- Repeats Steps 6–9 to make additional cuts.
- Turns the saw OFF once all cuts are completed, disconnects the saw from power, then cleans and sanitises the saw as directed in the *Cleaning & Sanitising* section page 28.

Adjusting the Blade Guard

- The blade guard protects the operator from accidental contact with the portion of the blade that is not cutting through a workpiece.
- The blade guide lock knob (see below) on the guide rail allows you to raise and lower the blade guard and blade guide assembly. To remove the blade guard, loosen and remove (2) cap screws securing the blade guard to the blade guide assembly (as per below).



IMPORTANT: Keep the blade guide assembly within 25mm/1 inch of your workpiece. This will provide adequate support for the blade where the pressure is greatest. This crucial when cutting through bone!

OPERATION

Tensioning the Blade

- A properly tensioned blade is essential for making accurate cuts, maximising blade life, and making other bandsaw adjustments. However, a properly tensioned blade will not compensate for cutting problems caused by an excessive feed rate, hardness variations between meats and bones, and improper blade selection.
- Optimal cutting results for any type of workpiece are achieved through a combination of correct blade selection, proper blade tension, properly adjusted blade guides and other bandsaw components, and using an appropriate feed rate.
- Improper blade tension is unsafe, produces inaccurate and inconsistent results, and introduces unnecessary wear on bandsaw components. Over-tensioning the blade increases the chance of the blade breaking or wheel misalignment. Under-tensioned blades wander excessively while cutting.

CAUTION

Saw blades are very sharp and can quickly cause cutting injuries. Always wear heavy leather PPE gloves when handling saw blades.



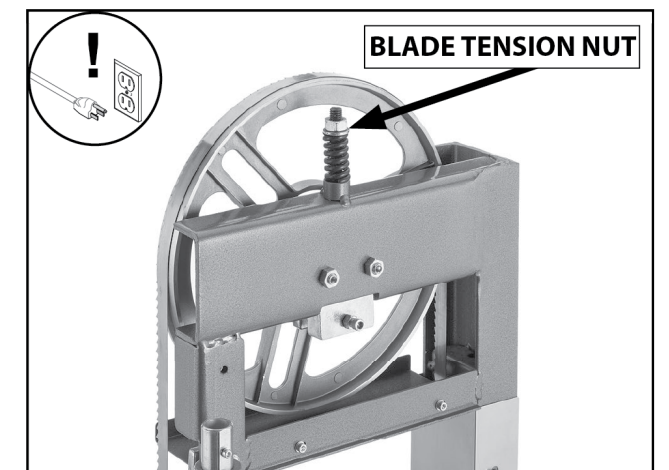
CAUTION

To prevent the blade falling off its wheels and causing injury or property damage, DO NOT rotate the blade tension nut when the saw is operating. ALWAYS disconnect the machine from power before adjusting blade tension.

To Tension the Blade

- Disconnect the machine from power!
- Remove the upper wheel cover.
- Verify the blade is tracking correctly by referring to *Adjust the Blade Tracking* on Page 15.
- Tighten the blade tension nut (see Fig. Below) to tension the blade until there is approximately 1/4" deflection when pressure is applied to the middle of the blade.

NOTE: Rotate the blade tension nut clockwise to increase blade tension, and counter-clockwise to decrease the blade tension.



- Install the upper wheel cover, and secure.

OPERATION

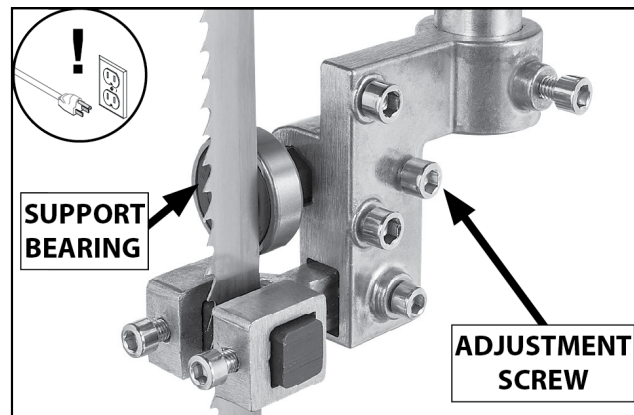
Adjusting the Blade Support Bearings

- Support bearings are positioned behind the blade near the blade guides, they prevent the blade from moving backward during operations. Proper adjustment of the support bearings helps you make accurate cuts and prevents the blade teeth from contacting the blade guides while cutting.

IMPORTANT: Verify blade is tracking and tensioned correctly before performing this procedure see *Tensioning the Blade* section on Page 19.

Upper Blade Support Bearing

- Disconnect the machine from power!
- Remove the blade guard.
- Loosen the support bearing adjustment screw (as below).



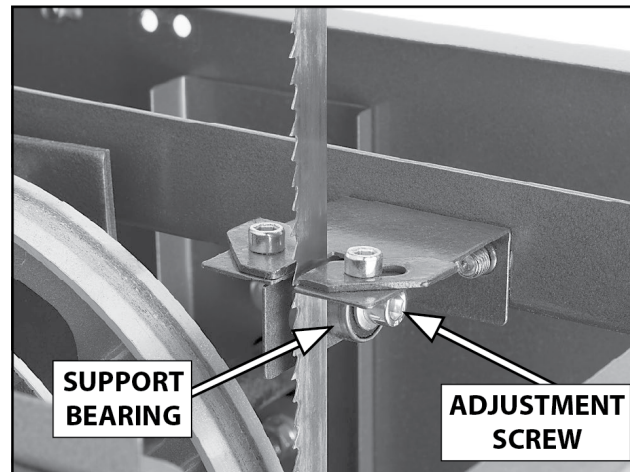
- Position the support bearing approximately 0.8mm (1/32") away from back of the blade.
- Tighten the support bearing adjustment screw.
- Re-install the blade guard removed in Step 2.

Lower Blade Support Bearing

- Disconnect the machine from power!
- Remove the table.

NOTE: The Fence and meat pusher can remain installed when removing the table.

- Loosen the support bearing adjustment screw (as below).

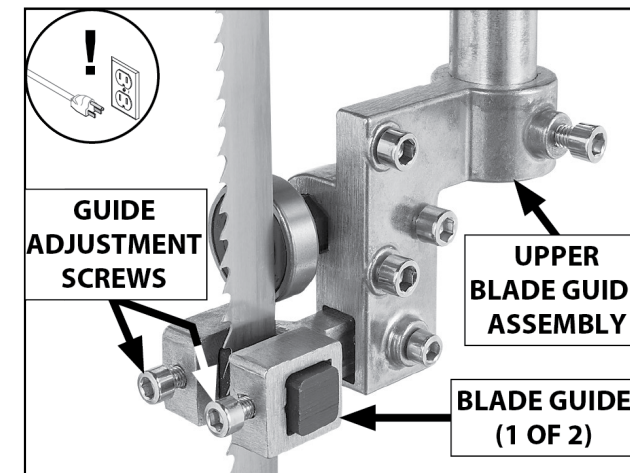


- Position the support bearing approximately 0.8mm (1/32") away from back of blade.
- Tighten the support bearing adjustment screw.
- Re-install the table removed in Step 2.

Adjusting the Blade Guides

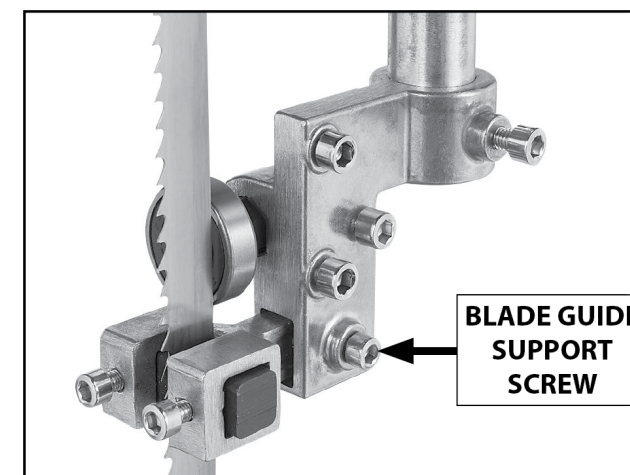
- The upper blade guides (see next Figure) can be adjusted left-to-right, as well as front-to-back, relative to the blade. Properly adjusted blade guides provide side-to-side support, from just behind the gullets to the back of the blade, to help keep the blade straight while cutting.

OPERATION

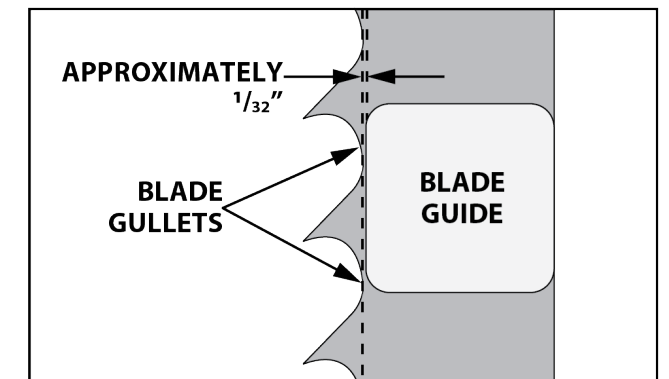


IMPORTANT: Verify blade is tracking and tensioned correctly before performing this procedure (see *Tensioning Blade* on Page 19).

- Disconnect the machine from power!
- Remove the blade guard.
- Loosen (2) guide adjustment screws (see Figure above), adjust blade guides approximately 0.1mm (0.004" about the thickness of a dollar bill) away from blade, and tighten the screws.
- Loosen blade guide support screw (see Figure below).



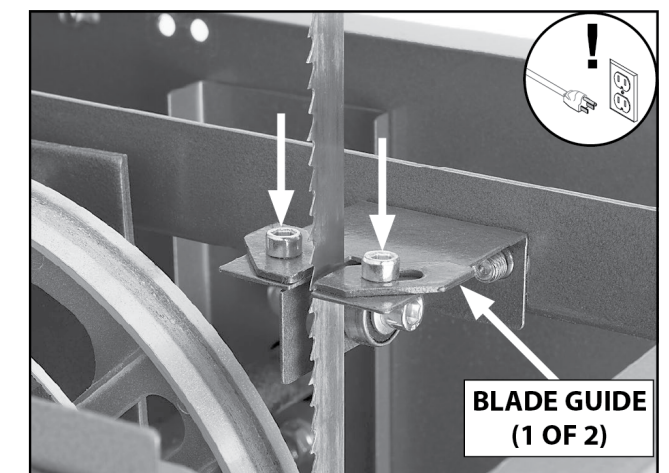
- Position the blade guides approximately 0.8mm (1/32") behind the gullet of the blade teeth (see next Figure), and tighten the screw.



- Remove the table to gain access to the lower blade guides.

NOTE: The Fence and meat pusher can remain installed when removing the table.

- Loosen the lower blade guide adjustment screws (see Figure below), adjust the blade guides to approximately 0.1mm (0.004" about the thickness of a dollar bill) away from the blade.



- Position the blade guides just behind gullet of the blade teeth (see Figure at top of page), and secure.
- Re-install the table removed in Step 5.
- Re-install the blade guard removed in Step 2.

OPERATION

Changing the Blade

- The saw blade included with the Model TSBM is a general purpose 4 TPI (Teeth Per Inch) blade. Under normal conditions, the saw blade should be replaced after cutting approximately 2000kg of meat or bone. Do research to help select the best 2085mm X 16mm blade for your desired application.

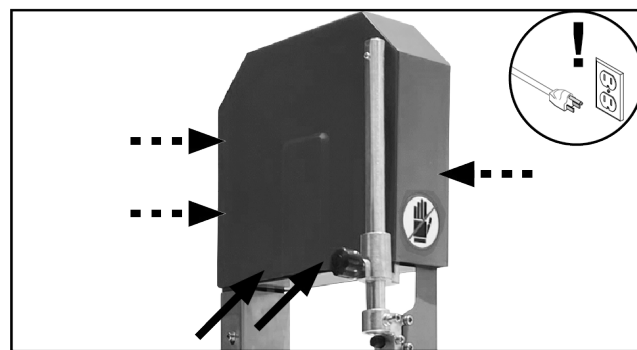


WARNING

ONLY use food-grade saw blades (typically stainless steel) to prevent food contamination from metal corrosion.

Removing the Blade

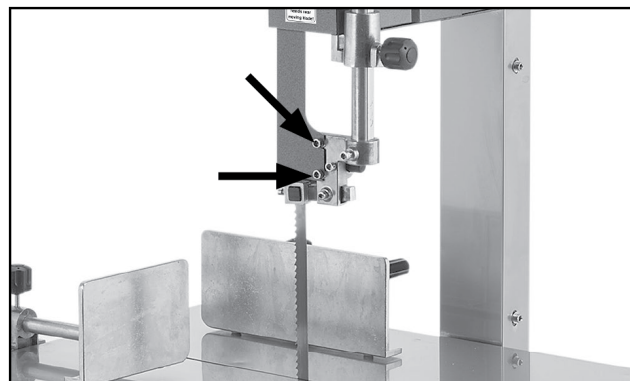
- Disconnect the machine from power!
- Remove (5) cap screws securing the upper wheel cover (see Figure below), then remove the cover.



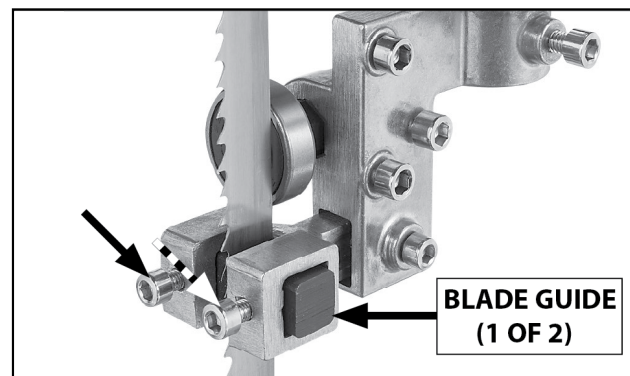
- Remove the table and covers, then open the cabinet door (see next Figure).



- Loosen (2) cap screws securing the blade guard (see below) and remove guard.

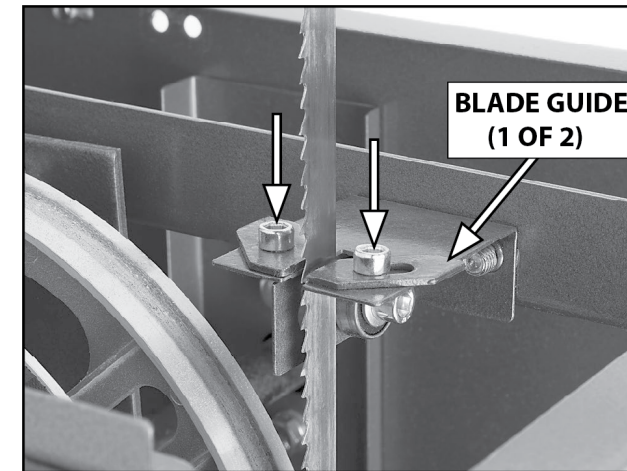


- Loosen (2) cap screws securing the upper blade guides (as below) and move the blade guides away from the blade.

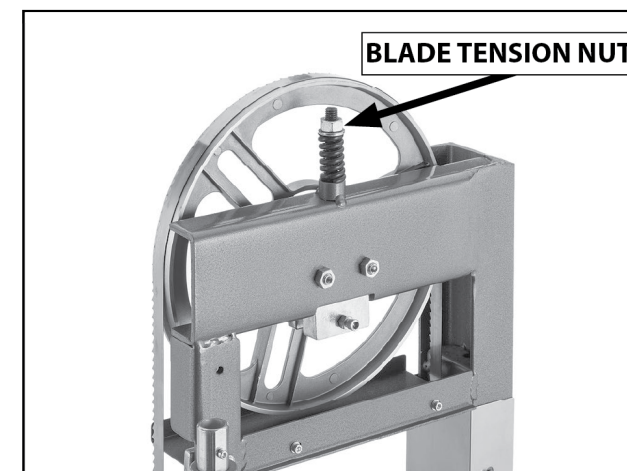


OPERATION

- Loosen (2) cap screws securing the lower blade guides (see Figure below) and move the blade guides away from the blade.



- Release tension from the blade by turning the blade tension nut (see Figure below) counter-clockwise until the blade moves freely.

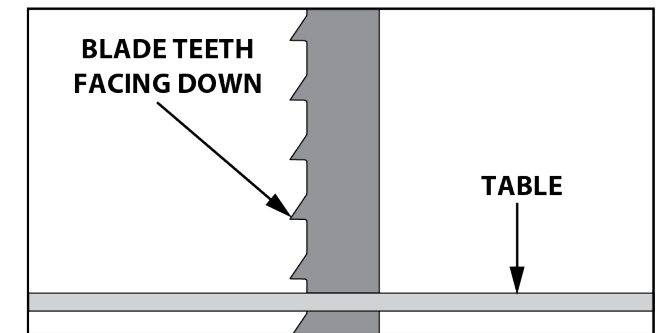


- Put on a pair of heavy leather gloves to protect your hands from the blade teeth, then carefully remove the blade.

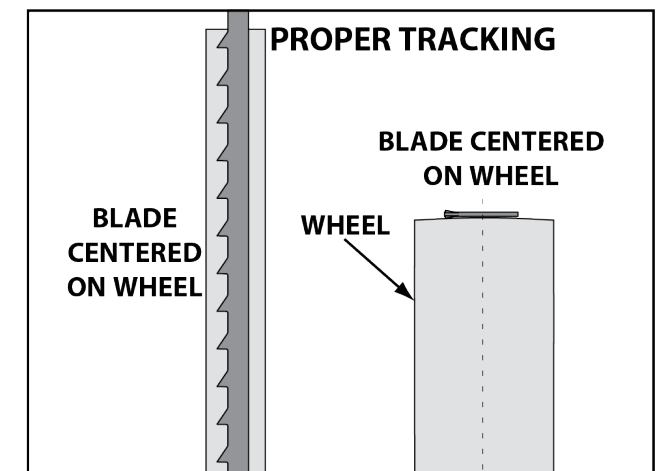
Installing the Blade

- Disconnect the machine from power!
- Slide the blade through the upper and lower blade guides and mount the blade on the upper wheel. Verify that the blade teeth point down, as shown in the Figure below.

NOTE: If the teeth will not point downward in any orientation, the blade is inside-out. Remove the blade and twist it right-side-out.

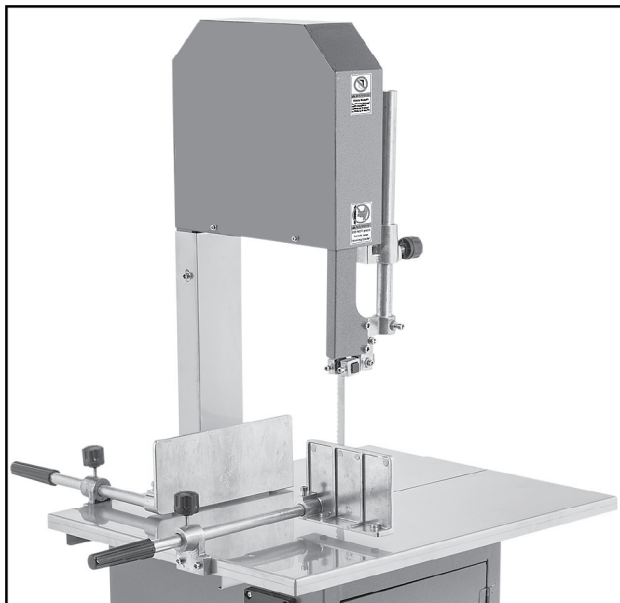


- Verify that the blade tension is released by turning the blade tension nut counter-clockwise.
- Mount the blade on the lower wheel and verify the blade is centred on both wheels (see Figure below).



OPERATION

- Verify the blade is tracking correctly (see Steps 3–9 of *Blade Tracking* on Page 15).
- Re-install the blade guard and tighten (2) cap screws loosened in Step 4 of *Removing the Blade* on Page 22.
- Close the cabinet door, re-install the covers and the table (see below) removed in Steps 2–3 of *Removing the Blade* on Page 22, and secure.
- When cutting bone, feed the bone into the blade slowly. If you hear the motor slow down during cutting, release pressure at once. DO NOT twist the blade during cutting or the blade may bind or break.



Cutting Meat & Bone

- The Model TSBM Meat Cutting Bandsaw is designed for cutting fresh or frozen meat and bones.
- When cutting meat with your bandsaw, use the fence to gauge the thickness of your desired cut, and use the meat pusher to brace the meat. Make sure the fence will not be in line with the cuts.
- With frozen meat, pay attention to the rate at which you feed meat into the moving blade. All cuts should be slow and smooth. If you hear the motor slow down or struggle with a cut, reduce pressure.

WARNING

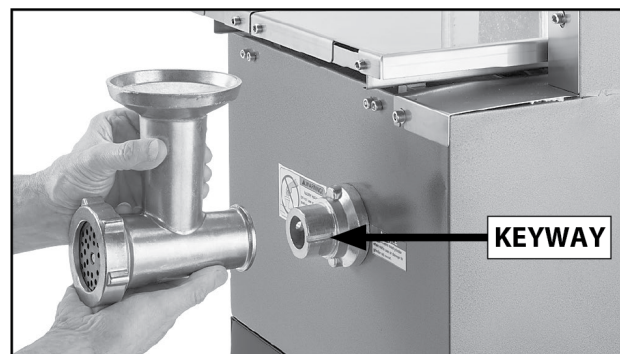
This saw can quickly cause cuts or amputation injuries. Use the included fence to guide the meat through the blade. NEVER place your hand or fingers in line with, or near the moving blade.

Grinding Meat

- The meat grinder is used for grinding hamburgers or sausages. The meat grinder automatically engages when it is installed on the bandsaw.

Installing the Meat Grinder

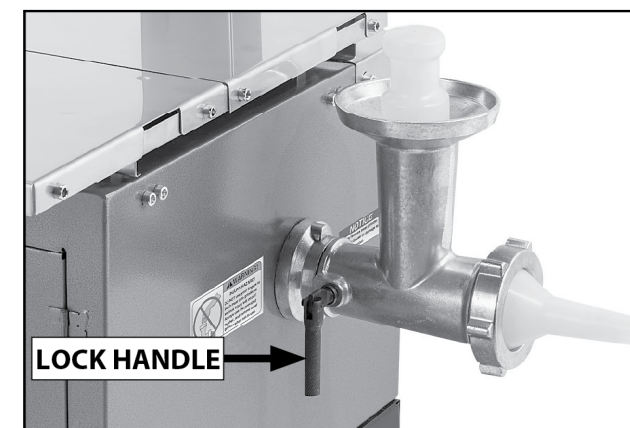
- Disconnect the machine from power!
- Ensure all components of the meat grinder are properly cleaned and sanitised (refer to *Cleaning & Sanitising* on Page 28).
- Loosen the lock handle on the meat grinder, and line the fixed key on the grinder with the keyway on the grinder mount (see below).



OPERATION

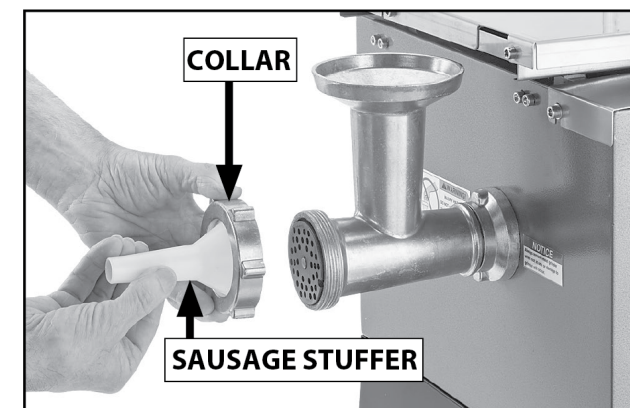
- Slide the meat grinder all the way on the grinder mount and tighten the lock handle to secure the meat grinder in place (see Figure below).

NOTE: If the meat grinder does not fully seat, spin the pulley wheel by hand so the meat grinder tongue fits into the groove on the auger.



Installing the Sausage Stuffer

- Remove the collar from the end of the meat grinder (see below), fit the collar over the sausage stuffer, and tighten onto the meat grinder.



Using the Meat Grinder

- Lower the blade guard as low as it will go and lock it in place.
- Prepare a place for the ground meat to exit the meat grinder, or place a sausage casing around the sausage stuffer.
- Turn the saw ON and wait for the blade to reach full speed, then slowly drop portions of meat into the meat grinder, one piece at a time.
- Turn the saw OFF once grinding is completed, then clean and sanitise the meat grinder (see *Cleaning & Sanitising* on Page 28).

WARNING

DO NOT use your fingers to push meat into the grinder or serious injury will occur! Always use the provided pusher, and remove the meat grinder when it is not in use.

CAUTION

Always remove the meat grinder when it is not in use. Failure to comply may result in damage to the meat grinder due to insufficient lubrication without meat being processed.

OPERATION

Tensioning/Replacing the V-Belt

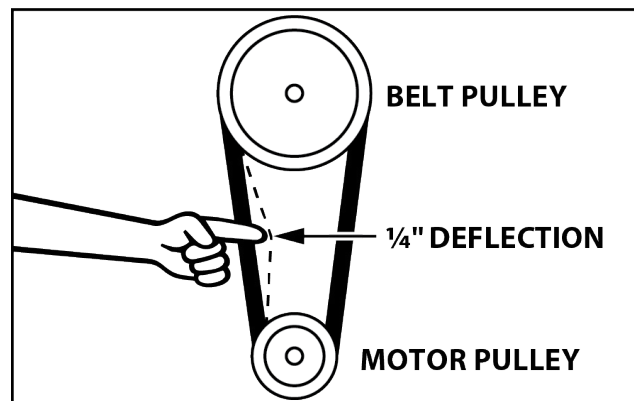
- To ensure optimum power transmission from the motor to the blade, the V-belt must be properly tensioned, and free of cracks, fraying, and wear. Belt tension and condition should be checked every month—more often if the bandsaw is used daily under heavy load.

Checking and Tensioning

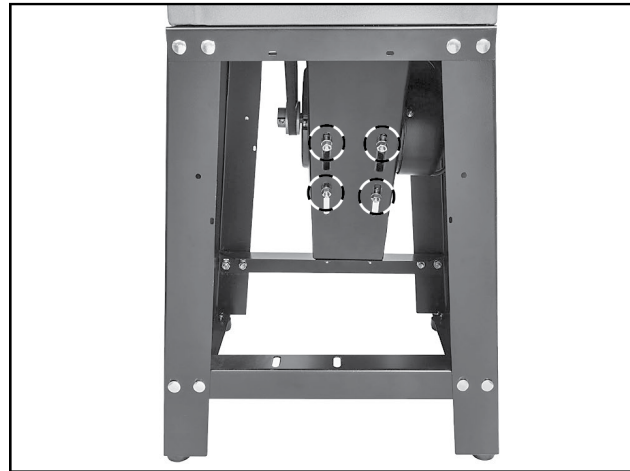
- Disconnect the machine from power!
- Remove the table and both stand covers, then open the cabinet door.

NOTE: The Fence and meat pusher can remain installed when removing table.

- Inspect the V-belt; if it is cracked, frayed, or glazed, proceed to *Replacing V-Belt* in the next section.
- Check the V-belt tension by applying moderate pressure between pulleys (see Figure below).
 - » If the V-belt deflection is approximately 1/4", the belt is correctly tensioned and no further adjustment is required.
 - » If deflection is not approximately 1/4", the V-belt requires tensioning. Proceed to the next Step.



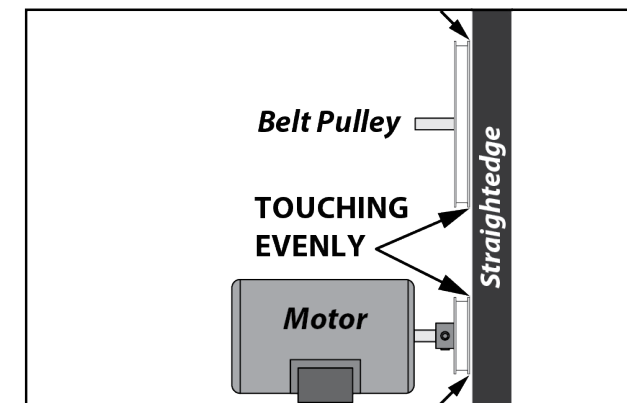
- Loosen (4) hex nuts securing the motor to the motor mount (see Figure below).



- Press down on the centre of the motor to tension the V-belt, then tighten (4) hex bolts to secure the motor. Make sure that the motor does not twist while applying pressure.
- Check the V-belt tension by applying moderate pressure between pulleys (see Figure the left).
 - » If the V-belt deflection is approximately 1/4", the belt is correctly tensioned. Proceed to the next Step.
 - » If there is more than 1/4" deflection, loosen (4) motor mount hex bolts and hex nuts, then repeat the previous 2 Steps until properly tensioned.
- If tension cannot be achieved, proceed to *Replacing the V-Belt* Section.
- Hold a straight edge close to the centre of both pulleys, and ensure the straight edge fully extends across rims of both pulleys (see next Figure).
 - » If the pulleys are parallel and coplanar, the straight edge will touch the top and bottom rims on both pulleys. No further adjustment is required.

OPERATION

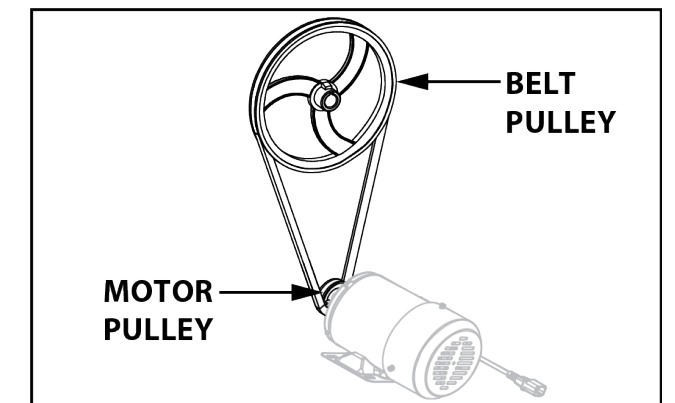
- » If the pulleys are parallel but not coplanar, the straight edge will touch the top and bottom rims on one pulley, but will not touch either rim on the other pulley. In this case, loosen (4) carriage bolts securing the motor mount, then re-position the motor so the straight edge touches the top and bottom rims on both pulleys. Repeat the previous two Steps.



- Re-install the table, fences, and both stand covers, then close the cabinet door.

Replacing the V-Belt

- Disconnect the machine from power!
- Remove the table, fences, and both stand covers, then open the cabinet door.
- Loosen (4) hex bolts securing the motor to the motor mount (see Figure on previous page).
- Raise the motor, then remove the V-belt from the motor pulley and belt pulley.
- Fit the replacement V-belt into the belt pulley groove, raise the motor, then fit the V-belt into the motor pulley groove (see Fig. below).



- Properly tension the V-belt (refer to Steps 4–7 of *Tensioning the V-Belt* on the previous Page).
- Re-install the table and both stand covers, then close the cabinet door.

CLEANING & SANITISING



WARNING

Always be as thorough as possible when cleaning and sanitising the bandsaw and its parts. Any surface that has been exposed to raw meat or bone may develop bacteria that could cause illness or death if not properly cleaned and sanitised.



WARNING

Cleaning saw while it is connected to power could cause severe electrical shock or death. ALWAYS disconnect the bandsaw from power before cleaning and sanitising. DO NOT reconnect it to power until all parts are completely dry.



WARNING

When cleaning the bandsaw with sanitisers, always make sure the product is approved for stainless steel food processing equipment, and always follow the manufacturer's recommendations. To prevent illness or death, never use a product that will make the meat unsafe for human consumption.

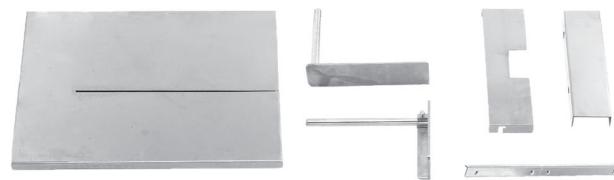
Cleaning the Bandsaw

- Get in the habit of properly cleaning and sanitising the saw before and after each use to avoid contamination and illness.

To clean the saw and prepare for sanitising:

- Prepare a clean and sanitised area, preferably stainless steel, for placing down parts as you remove them from saw.
- Disconnect the machine from power!
- Remove table, fences, covers, and meat grinder, then disassemble (see below).

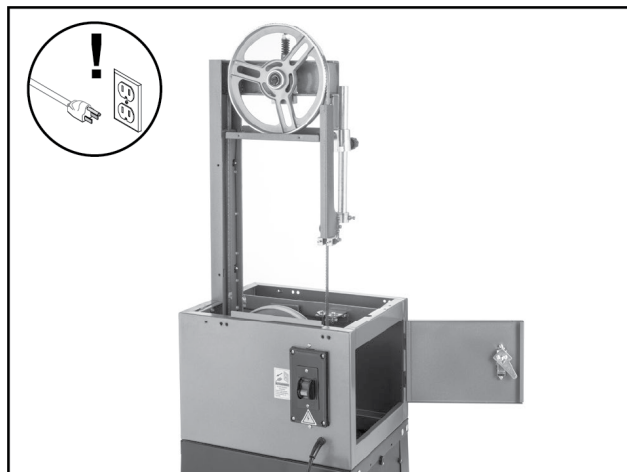
TABLE, FENCES, AND COVERS



MEAT GRINDER



- Remove upper wheel cover and open cabinet door (see Figure below).



CLEANING & SANITISING

- Remove the saw blade (see *Changing the Blade* on Page 22).
- Remove and dispose of the largest particles of meat/bone.
- Using hot water and a soft sponge/cloth, rinse and wipe away as much leftover material as possible.
- Clean all other surfaces of the saw body with a soft sponge/cloth and hot, soapy water (minimum 77°C).



NOTICE

To avoid damaging electrical parts when reconnecting the bandsaw to power, DO NOT spray the saw body with water or solutions. DO NOT allow any liquid to enter the side vents around the motor. Instead, use a cloth rag and hot, soapy water to thoroughly clean the surfaces of the saw body.



NOTICE

Never use abrasive material (course sponges, steel wool, steel brushes, etc.) to clean the machine. Abrasives remove the protective coating on stainless steel and should always be avoided.

- Clean the sink compartments with hot water (minimum 77°C) and dish soap, then rinse them thoroughly with hot water.
- Sanitise the sink compartment as instructed in *Proper Sanitation* on Page 30.

NOTE: Dishwashers are a good option for cleaning and sanitising at the same time because they use heat. Place any parts that will fit inside of the dishwasher, and use the highest heat settings (minimum 77°C).

- Fill a clean and sanitised sink compartment with hot, soapy water (minimum 77°C).
- Submerge the removed parts in hot, soapy water and scrub all surfaces thoroughly.
- Rinse all parts with hot, clean water (minimum 77°C) until all visible suds are removed.

NOTE: If the soapy water becomes hazy, drain the compartment, clean and sanitise, and refill with more hot, soapy water (minimum 77°C).

- Use hot, clean water (minimum 77°C) and a clean, soft sponge/cloth to remove soapy residue.
- Allow all parts and surfaces to air dry after rinsing.

IMPORTANT: DO NOT dry parts with a cloth or towel! This will help to prevent spreading contaminants after cleaning.

- Sanitise the removed parts and the saw body as instructed in *Proper Sanitation* on Page 30.
- Lubricate the entire saw blade and table top as instructed in the *Lubrication* section on Page 31.
- Re-assemble and install all components removed in Steps 3–5.
- Cover the machine with a clean, dry cloth until next use.

PROPER SANITATION



WARNING

Bacteria from raw meat has been frequently linked to illness and even death! Describing proper meat handling techniques outside of cleaning the bandsaw is beyond the scope of this manual. If you are unclear about sanitary meat handling practices, contact your local Board of Health or research proper methods of meat handling.



NOTICE

Acidic solutions, saline-based solutions, disinfectants, and sterilisers (hypochlorites, tetravalent ammonia salts, iodine compounds, nitric acid, etc.) will corrode stainless steel over time. Verify your cleaning compound is made for cleaning stainless steel before using on this machine.

- All surfaces of the saw that are exposed to the cutting process must be properly cleaned and sanitised. Cleaning the food debris and residue away is only half of the process. These surfaces must now be disinfected with solutions that will remove bacteria and other micro-organisms, and prevent their growth.
- Some sanitisers require direct applications, while others are designed to be diluted in water and used to soak the item for a

specified period of time. The best method for choosing a chemical sanitiser is to do the research and determine which product is best for your particular situation. Sanitising solutions should be changed as soon as they become dirty, or every two hours.

- One simple sanitiser that can be used for many applications is regular bleach.

NOTE: DO NOT use bleach that contains odour masking agents or surfactants. These chemicals have not been proven effective for this type of sanitation.

- To use bleach as a sanitiser, scrub a sink compartment with hot, soapy water (minimum 77°C), then rinse it until clear. Fill the sink with one tablespoon of bleach per 3.7 Litres of COOL water.

NOTE: NEVER exceed 200 ppm (parts per million) of available chlorine in equipment sanitising solutions. Use a pH testing kit to confirm the effectiveness of your sanitising solution.

- For removable parts, submerge each item for two minutes. For larger surfaces, use a clean cloth and the bleach solution to wipe down these surfaces for two minutes. Allow to air dry—DO NOT rinse these items after sanitising!
- If porous surfaces, such as wood, are used in the cutting process, clean as previously described, then soak for two minutes in a solution of three tablespoons of bleach to 3.7 Litres of COOL water. Rinse items thoroughly after sanitising!

MAINTENANCE

- Before cleaning or performing any maintenance, you must ensure the saw is switched off and disconnected from the power supply.
- Ventilation openings and switch levers must be kept clean. DO NOT attempt to clean by inserting pointed objects through openings.
- Do not use harsh chemicals or solvents when cleaning this tool.
- If you discover any damaged or broken parts, consult your nearest ToolShed for replacements and advise.

Cleaning Schedule

- For optimum performance from this machine, this maintenance schedule must be strictly followed.

Ongoing:

To minimise your risk of injury and maintain proper machine operation, shut down the machine immediately if you ever observe any of the items below, and fix the problem before continuing operations:

- Loose mounting bolts.
- Damaged saw blade.
- Worn or damaged wires.
- Any other unsafe condition.

Daily Maintenance:

- Clean and sanitise the machine before and after every use.
- Lubricate the entire blade and table top.
- Cover the machine with a clean, dry cloth until next use.

Monthly Check:

- V-belt tension, damage, or wear.
- Under normal conditions, Replace the saw blade after cutting approximately 2000kg of meat or bone.

Lubrication

- Maintain the blade and table top with a thin film of food-grade lubricant that will NOT support bacterial growth or become rancid.

NOTE: DO NOT use food-grade oils typically used for cooking (vegetable oil, olive oil, etc.) that can become rancid over time and may cause illness.

- Make sure the product you use is specifically designed for protecting food processing equipment. Always follow the manufacturer's recommendations when using their products.

NOTE: DO NOT lubricate the meat grinder! The meat processed in the grinder serves as a natural lubricant during use.

- The wheel bearings are shielded and lubricated, and require no maintenance throughout their lifespan.

V-Belt

- Avoid getting grease or oil on the V-belt or pulleys. Check the V-belt as part of a monthly inspection for proper tension and belt condition. Cracking and glazing could result in belt failure. Replace the belt if such conditions appear.

TROUBLESHOOTING

Motor & Electrical

FAULT	POSSIBLE CAUSE	SUGGESTED SOLUTION
Machine Does Not Start or Power Supply Breaker Trips Immediately After Start Up.	OFF button not reset.	Press OFF button until it clicks.
	Incorrect power supply voltage or circuit size.	Ensure correct power supply voltage and circuit size.
	Power supply circuit breaker tripped or fuse blown.	Ensure circuit is free of shorts. Reset circuit breaker or replace fuse.
	Motor wires connected incorrectly.	Correct motor wiring connections.
	Centrifugal switch adjustment/contact points at fault.	Adjust centrifugal switch/clean contact points. Replace either if at fault.
	Wiring broken, disconnected, or corroded.	Fix broken wires or disconnected/corroded connections.
	ON/OFF switch at fault.	Replace switch.
	Motor or motor bearings at fault.	Replace motor.
Machine Stalls or is Underpowered.	Excessive feed rate/pressure.	Reduce feed rate/pressure.
	Workpiece material unsuitable for machine.	Only cut fresh or frozen meat and bones.
	Fence crooked, loose, or misadjusted.	Straighten or adjust fence.
	Machine undersized, blade dull, or wrong blade for task.	Replace blade. Use correct blade/ reduce feed rate and depth of cut.
	Blade slipping on wheels.	Adjust blade tracking and tension.
	Belt slipping/pulleys misaligned.	Clean/tension/replace belt; ensure pulleys are aligned.
	Motor wired incorrectly.	Wire motor correctly.
	Pulley/sprocket slipping on shaft.	Tighten/replace loose pulley/shaft.
	Motor overheated.	Clean motor, let cool, and reduce workload.
	Run capacitor at fault.	Test/repair/replace.
	Extension cord too long.	Move machine closer to power supply; use a shorter extension cord.
	Centrifugal switch/contact points at fault.	Adjust centrifugal switch/clean contact points. Replace either if at fault.
	Motor or motor bearings at fault.	Replace motor.

TROUBLESHOOTING

Motor & Electrical (Cont.)

FAULT	POSSIBLE CAUSE	SUGGESTED SOLUTION
Machine Has Vibration or Noisy Operation.	Motor or component loose.	Replace damaged or missing bolts/nuts or tighten if loose.
	Stand feet not adjusted properly.	Adjust stand feet to stabilise machine.
	Blade weld at fault/teeth broken.	Replace blade.
	V-belt worn, loose, pulleys misaligned or belt slapping cover.	Inspect/replace belt. Realign pulleys if necessary.
	Pulley loose.	Secure pulley on shaft.
	Motor mount loose/broken.	Tighten/replace.
	Motor fan rubbing on fan cover.	Fix/replace fan cover; replace loose/damaged fan.
	Centrifugal switch.	Replace.
	Motor bearings at fault.	Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Operations

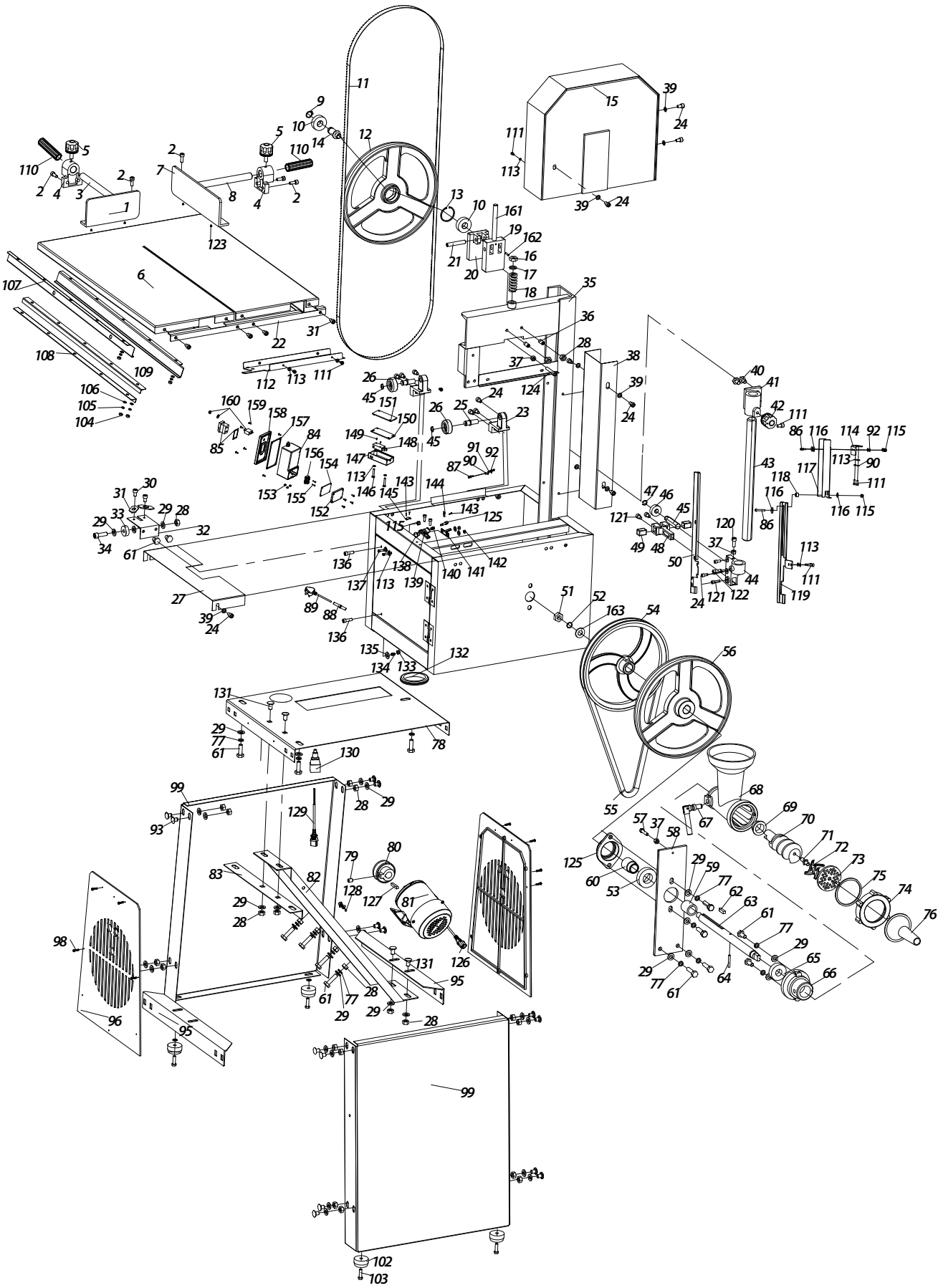
FAULT	POSSIBLE CAUSE	SUGGESTED SOLUTION
Blade or Teeth Break or Crack.	Blade tension is incorrect.	Adjust blade tension.
	Blade is incorrect for application.	Use correct blade for application.
	Excessive feed rate/pressure.	Reduce feed rate/pressure.
	Blade is dull/weld at end-of-life.	Replace blade.
	Blade tracking is incorrect.	Adjust blade tracking.
	Blade guides/support bearings improperly adjusted.	Adjust blade guides/support bearings. Replace if faulty.
	Bone stuck in blade guides/support bearings.	Clean and sanitise blade guides/support bearings.

TROUBLESHOOTING

Operations (Cont.)

FAULT	POSSIBLE CAUSE	SUGGESTED SOLUTION
Blade Tracks Incorrectly or Comes off the Wheels.	Blade tracking is incorrect.	Adjust blade tracking.
	Blade tension too loose.	Increase blade tension.
	Blade guides/support bearings improperly adjusted.	Adjust blade guides/support bearings.
	Excessive feed rate/pressure.	Reduce feed rate/pressure.
	Incorrect blade for machine.	Install correct blade.
Cut is Crooked or Blade Wanders (Blade Lead).	Blade is bell-mouthed, worn, or dull.	Replace blade. Remove tension from blade when not in use.
	Excessive feed rate/pressure.	Reduce feed rate/pressure.
	Blade tension too loose.	Increase blade tension.
	Blade is too narrow or tooth type/TPI is incorrect for operation.	Use wider blade. Ensure tooth type & TPI are correct.
	Blade guides/support bearings improperly adjusted.	Adjust blade guides/support bearings.
	Blade dull or has damaged tooth set.	Replace blade.
	Blade tracking is incorrect.	Adjust blade tracking.
Blade Dulls Prematurely.	Excessive feed rate/pressure.	Reduce feed rate/pressure.
	Incorrect blade tooth type or TPI.	Use blade with correct tooth type and TPI.
	Blade is twisted.	Adjust/replace blade.
	Blade is slipping on wheel.	Adjust blade tension.
	Blade guides hitting teeth and damaging tooth set.	Adjust blade guides/support bearings.

TSBM EXPLODED VIEW & PARTS LIST



TSBM EXPLODED VIEW & PARTS LIST

1	Back Guide	54	Belt Wheel	111	Screw M4x10 X8
2	Screw M6x16 X6	55	V-Belt A1000	112	Pulley Guard
3	Guide Rod 650mm Bar	56	Motor Drive for Wheel	113	Flat Washer 4 X2
4	Fixed Bracket X2	57	Outer Hex Bolt M6x25	114	Locking Bracket
5	Fastening Knob M6x20 X3	58	Driving Wheel Supporting Plate	115	Locking Nut M4 X3
6	Workbench Table	59	Bushing (B)	116	Big Flat Washer 4 X2
7	Side Guide	60	Bushing (A)	117	Bezel
8	Side Guide Rod	61	Outer Hex Bolt M8x20 X13	118	(Motor Fan Cover) Washer
9	Shaft Retaining Ring #15	62	Key B6x70	119	Left Protection Plate
10	Bearing 6202 X2	63	Spindle	120	Screw M6x30
11	TSBBM Blade	64	Spring Pin 4x40	121	Screw M6x10 X5
12	Drive Wheel	65	Bearing 6203	122	Screw M6x16
13	Retaining Ring #35	66	Connecting Holder	123	Friction Pad X4
14	Drive Shaft	67	Clamping Handle	124	Screw M6x35
15	Upper Head Cover	68	Mincing Hopper	125	Bearing Housing
16	Hex Nut M19	69	Mincer Insert	126	Plug
17	Flat Washer #10	70	Mincer Shaft	127	Key 5x30
18	Tension Spring	71	Mincer Knife Bolt	128	Buckle
19	Lifting Block	72	Mincer Reamer	129	Socket
20	Adjusting Block	73	Mincer Round Knife	130	Large Guard Coil
21	Connecting Pin	74	Mincer Blade Cover	131	Half Square Neck Bolt M8x16 X4
22	Table Supporting Plate (B)	75	Mincer Seal Ring	132	Large Guard Coil
23	Pulley Bracket X4	76	Mincer Funnel	133	Nylon Locking Nut M5 X2
24	Hex Screw M6x10 X4	77	Spring Washer 8 X13	134	Compression Spring (C) X2
25	Wheel Axle X4	78	Stand Cover	135	Flat Washer 5 X2
26	Wheel X4	79	Flat Screw M8x12	136	Cap Screw M5x25 X2
27	Cover	80	Motor Pulley	137	Cap Screw M4x14 X2
28	Hex Nut M8 X30	81	Motor	138	Cap Screw
29	Flat Washer #8 X37	82	Motor Supporting Plate	139	Plug Pin Holder
30	Hex Screw M6x10 X2	83	Connection Beam	140	Pin Hand Spring
31	Positioning Plates X2	84	Switch Box Cover	141	Clamp Claw
32	Positioning Bracket (A)	85	Switch Box	142	Hex Nut M4 X2
33	Bearing 608	86	Cross Head Cap Screw	143	Cross Head Screw M4x20 X2
34	Hex Cap Screw M8x16 X2	87	Cross Head Cap Screw	144	Micro Clamp
35	Main Body	88	Strain Relief	145	Clamp
36	Flat Screw M8x12 X2	89	Power Cord	146	Cross Head Screw M4x25 X2
37	Hex Nut M6 X3	90	Spring Washer 4 X8	147	Micro Switch Cover
38	Guide Cover	91	Grounding Pin 4 X2	148	Switch
39	Flat Washer #6 X13	92	Washer 4 X2	149	Cross Head Screw ST2.9x16 X2
40	Outer Hex Bolt M8x12 X2	93	Bolt M8x12 X16	150	Micro Cover Housing
41	Fixed Mount Holder	95	Supporting Beam X2	151	Micro Cover Plate
42	Knob	96	Side Protecting Plate	152	Switch Box Cover
43	Guide Bar	98	Cross Head Screw ST3.5x6.5 X8	153	Coil Guard (C) X3
44	Bracket	99	Right Assembly Cover X2	154	Small Gasket
45	Pin	102	Rubber Feet X4	155	Cross Head Screw ST2.9x20 X2
46	Bearing 6200	103	Outer Hex Bolt M6x20 X4	156	Terminal PA10
47	Retaining Ring 10 X3	104	Hex Nut M5 X20	157	Large Gasket
48	Guide Bracket	105	Spring Washer 5 X20	158	Gasket Switch Box Cover
49	Position Block X2	106	Flat Washer 5 X20	159	Cross Head Screw ST4.2x13 X10
50	Guide Guard	107	Sliding Slot (B)	160	Hex Nut & Overcurrent Protector
51	Hex Nut M12	108	Table Supporting Plate (A)	161	Elevating Bolt
52	Spring Washer 12	109	Sliding Pulley (A)	162	Spring Pin 2.5x16
53	Bearing 6005	110	Pulley Handle X2	163	Flat Washer 12